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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,958	05/29/2002	Malcolm Bruce Gray	743414-0008	6053

22204 7590 10/29/2003

NIXON PEABODY, LLP  
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EXAMINER

CONNOLLY, PATRICK J

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 10/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/018,958	<b>Applicant(s)</b> GRAY ET AL.	
	<b>Examiner</b> Patrick J Connolly	<b>Art Unit</b> 2877	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☒ Some \* c) ☐ None of:  
    1. ☒ Certified copies of the priority documents have been received.  
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
    \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
    a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

The USPTO is participating in a search exchange pilot program with the Australian Patent Office (APO). As part of the pilot program, the USPTO has received a copy of the Search Report prepared by the Australian Patent Office on the counterpart Australian application for which priority under 35 U.S.C. 119(a) is claimed. The references cited in the APO Search Report have been considered by the examiner and have been listed on the PTO-892 form. A copy of these references is not being furnished to applicant with this Office action. It will not be necessary for applicant to submit these references in an information disclosure statement.

#### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Australia on June 30, 1999. It is noted, however, that applicant has not filed a certified copy of the PQ 1292 application as required by 35 U.S.C. 119(b).

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,412,676 to Schnier et al (hereafter Schnier).

As to claims 1, 7, 13 and 19, Schnier teaches a method and apparatus (see Figure 3) for controlling the frequency of a diode laser including: misaligning a beam input into an optical cavity to produce non-degenerate TEM<sub>0n</sub> modes, and detecting two spatially distinct regions of the interference beams and corresponding TEM<sub>0n</sub> modes to produce an error signal indicative of the difference between the TEM<sub>00</sub> mode frequency and the cavity resonance frequency from the signal (see column 7, lines 21-69, column 8).

Further Schnier teaches misaligning the cavity beam so that only two TEM modes are detected (see column 8, lines 50-55).

Although Schnier teaches detecting the TEM00 and TEM04 modes, it would be obvious to one of ordinary skill in the art at the time of invention that the beam could be misaligned in order to detect the TEM00 and TEM01 modes.

With further regard to claims 7 and 19, Schnier teaches a two beam interferometer set up (see Figure 3) where the change in cavity length of the laser and the change in the external optical cavity length are measured by introducing misalignment and measuring an error signal based on TEM mode measurements.

As to claims 2, 8, 14 and 20, while Schnier does not teach identical aperture sizes in order to control beam sample sizes, it would have been obvious to one of ordinary skill in the art at the time of invention to match these sizes in order to control potential areas of signal error.

As to claims 3, 9, 15 and 21, while Schnier does not teach specifically forming detected beam portions from half cross section of the beam, it would have been obvious to one of ordinary skill in the art at the time of invention to do so.

As to claims 4, 5, 10, 11, 16, 17, 22 and 23, Schnier teaches misaligning the input beam, but does not teach a specific method of doing so. It would have been obvious to one of ordinary skill in the art at the time of invention to achieve this misalignment by tilting or offsetting the beam, as these are well known methods of beam manipulation.

As to claims 6, 12, 18 and 24, while Schnier does not teach focusing the beam onto the detectors, this is notoriously well known method in the art and it would have

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been obvious to one of ordinary skill in the art at the time of invention to focus the beams onto the detectors.

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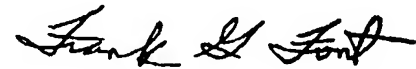
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Connolly whose telephone number is 703.305.4397. The examiner can normally be reached on 9 am-5.30 pm ... Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 703.308.4881. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0956.

pjcf/v



Frank G. Font  
Supervisory Patent Examiner  
Technology Center 2877